

Amendments to the Specification:

At the indicated page and line numbers, please replace the existing section with the one set forth below:

(Page 26, line 30 through page 28, line 14)

Brief Description of the Figures

Figure 1 demonstrates the characterization of the Nurrl-C17.2 clones.

Figure 1A1a shows the residual proliferative rate of the parental-, Nurrl- and mock-C17.2 control clones. %BrdU+ indicates the percentage of cells which incorporated BrdU after a six-hour pulse in serum free media.

Figure 1B1b shows that expression of Nurrl significantly increases neuronal fate in serum free media.

%TuJ1+/%BrdU- indicates the percentage of cells which expressed β -tubulin III but did not incorporate BrdU.

Figure 1C1c shows that co-culturing two of the clones with E16 ventral mesencephalic cells significantly increases dopaminergic fate. %TH+ indicates the percentage of tyrosine hydroxylase positive C17.2 cells.

Figure 2 demonstrates the role of retinoids, bFGF, and proliferation in the induction of dopaminergic neurons from Nurrl-over-expressing neural stem or progenitor cell lines in ventral mesencephalic co-cultures.

Figure 2A2a shows the effects of SR11237, bFGF, and EGF on dopaminergic induction. %TH+ indicates the percentage of C17.2 cells in co-culture expressing tyrosine hydroxylase. (C) co-cultures of E16 VM cells with parental C17.2 cells or with Nurrl-C17.2-clone 42 cells; (SR) co-culture plus SR11237; (F) co-culture plus bFGF;

(α F) co-culture plus blocking antibody to bFGF (E) co-culture plus EGF.

Figure 2B2b demonstrates the link between proliferation and dopaminergic induction. %TH+ indicates the percentage of C17.2 cells after co-culture for 9 DIV expressing tyrosine hydroxylase. %BrdU+ indicates the percentage of those cells which incorporated BrdU.

Figure 3 shows that VM Type 1 astrocytes induce a dopaminergic phenotype on a Nurrl over-expressing neural stem cell line (Nurrl-C17.2-clone 42). %TH+ indicates the percentage of clone 42 cells expressing tyrosine hydroxylase. (E16 VM) co-culture of clone 42 with E16 ventral mesencephalon cells; (Tot) co-culture with total primary cells; (Ad+) co-culture with adherent cell fraction; (Ad-) co-culture with non-adherent cell fraction; (T1A) co-culture with Type 1 astrocytes; (P1 T1A) co-culture with Postnatal day 1 Type 1 astrocytes from the ventral mesencephalon. (Insert) insert separates clone 42 cells from P1 T1A cells in co-culture; (CTX) co-culture with cortex, (HC) co-culture with hippocampus; (SC) co-culture with spinal cord.

Figure 4 illustrates HPLC analysis of supernatants collected from co-cultures of Type 1 astrocytes of the ventral mesencephalon (T1A) with either KCl-depolarized Nurrl-C17.2-clone42 (c42) cells, or KCl depolarized parental C17.2 (C17-2) cells. (+SR+bFGF) co-cultures plus of bFGF and SR11237.

Figure 5 shows that early activity of Nurrl produces long-lasting changes in gene expression in C17.2 cells. Relative light units (RLU) indicates the expression of luciferase from a Nurrl activated NBRE-luciferase reporter.